



# Texas Agricultural Extension Service

## The Texas A&M University System

### Guar Production Factsheet for West Texas

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Contract guar acreage in the Texas South Plains and surrounding areas for 2000 was about 30,000 acres. Most acreage in 2000 was concentrated in Terry county (close to a contractor) and west Dawson County and far east Gaines County (after hailed-out cotton in early July).

**Past Production:** In the last 20 years 15,000 to 40,000 A of guar has been grown in the Vernon, TX, area with some across the Red River in Oklahoma. There is one processing plant for field guar in the U.S., Rhodia, Inc., in Vernon (940.553.2058) although they mostly process guar endosperm from India and Pakistan.

**Uses:** Guar primarily is processed for its galactomannom (or mannogalactan) gum which is extracted and widely used as a stabilizer and smoother in ice cream and other frozen desserts. Industrial uses include paper manufacture and especially as a frac gel in drilling muds. The guar meal following extraction is good high-protein feed, but as a hay or forage guar appears inferior to many other legumes.

**Background Information:** Guar is also known as cluster bean or guar bean though it is not a true member of the bean family. It does very well in droughty conditions, and in spite of limited soil moisture and rainfall achieved good yields in 1999. Guar is probably the most drought tolerant crop grown on the South Plains. Guar has occasionally been grown as a soil builder in the Rolling Plains. Crop insurance for guar, including hail only, is available in 2001.

**Yield Potential and Irrigation Response:** Typically, we'd expect 500-1100 lbs./A dryland, and 800-1400 lbs./A for limited irrigation (2-5"). A few growers had guar under center pivots in 1999 due to hail out on cotton. Irrigation was 2-3@ total and appeared to increase yields 200-300 lbs./A. Other growers have had good success in 2000, but heavy irrigation (every 3-4 days) with spray application actually reduced yields in one instance in 1999, possibly due to washing the pollen off this indeterminate crop. Spray irrigation is not recommended during pollination. Guar may respond better to large individual applications rather than frequent irrigation.

**TAEX Reports:** TAEX has not put out any information on guar since 1977 (Keys to Profitable Guar Production, TAEX, B-1399), which is out of print but still available. Additional information was gathered on N fertility, harvest methods, and varieties in Terry Co. in 1999. A dryland guar-cotton rotation project was initiated in 2000 at AGCARES in Dawson Co., but lost due to drought.

#### Basics of Guar Management:

\* Guar is drought tolerant and is well-suited for sandy ground.

\* Due to limited herbicide labels, it is not suited for weedy ground.

\* The best use of guar in South Plains agricultural production appears to be rotation with dryland cotton.

Establishment: Minimum soil temperature at planting, 65 F, but 70 F is better (plant later than cotton). Guar seeding dates for the South Plains is generally about May 20-July 5, earlier if soil temperatures are warm. In 2000, earlier planted guar, even into late April, was able to take advantage of early rains and outyielded guar at all other planting dates with some fields yielding as much as 1200 lbs./A. For dryland, use good certified seed free of morning glory (on 40-inch rows, 6-8 lbs./A dryland; 8 lbs./A irrigated). Seeding equipment and planter plates used for sorghum will suffice for guar. Four varieties are currently available, but little is known of their relative performance in West Texas. Kinman and Esser have the longest track record, but Santa Cruz and Lewis appeared to perform the best in 2000. In numerous trials in the Vernon area in the 1980s the average Lewis was about 100 lbs./A higher than Kinman, and about 200 lbs./A higher than Esser. Lewis pods mostly on the mainstem thus this variety in particular favors planting on narrower rows (30" or even drilled). Santa Cruz and Lewis also had the highest test weights among 2000 production (62-64 lbs./bushel), whereas Kinman and Esser were lower. In 2000 test weights of 57 or less were rejected at delivery to the processing plant in Vernon. Low quality material may be blended with higher grade guar to ensure acceptance.

Although good *Rhizobium* nodulation has not been achieved in the South Plains for this legume, inoculating with a guar-specific inoculant is still recommended (preferably one with a sticker already included). Use pre-plant yellow herbicides (trifluralin is labeled) to control weeds. A big problem is that there are no currently labeled post-emerge or over-the-top herbicides.

Production may be favorable on narrower spacing. A common harvest problem is that many of the pods on the mainstem and lowest branches are close to the ground and difficult to harvest. Increasing seeding rates slightly or narrowing row spacing might give the plant a more upright plant architecture, and guar appears to be most easily harvested if planted on a raised bed.

In-Season Management: Guar is a minimal input crop, which should be figured into production costs. If cultivating for weeds, do not throw dirt on lower limbs. No known fields have been treated for insects or disease in 1998-2000 in the South Plains although some fields with irrigation have developed alternaria and bacterial blight. Rhizoctonia is also a potential problem in heavily irrigated guar. Guar midge (not the same as sorghum midge, but rather the alfalfa midge) has been an occasional problem in the past in the Vernon area. Growers should watch for this insect if near alfalfa.

Termination and Harvest: Guar is indeterminant. Guar commonly has a few green pods up until harvest, mostly dry pods, and a green stem. Don't wait on these small, late-season pods to produce seed. Efforts to terminate the crop early with Round-Up or sodium chlorate have been inconclusive, often because of insufficient leaf area to absorb the chemical. Early termination will preserve quality and hasten harvest, which would have been valuable in the South Plains during 2000 with the wet fall weather we had.

A low-profile row-crop header may reduce harvest losses. On a drier than normal crop in Terry Co. in 1999, a row-crop header netted about 200 lbs./A more guar vs. a conventional flex header. In 2000, several growers did have good success with flex bar headers. Dry guar pods do not split open like a dry soybean pod, rather these dry pods may break off when disturbed.

The Year After Guar: Due to some pod shattering off the stalk at harvest, Round-Up Ready cotton after guar should provide one option for control of most volunteer guar the following year.

Contract Information for 2001: In West Texas prospective growers may call, Klint Forbes or Cory Golden, West Texas Guar, Brownfield, 806.637.4662 or 806.637.8096, mobile 806.893.6680; or Wes Campbell, Floydada, 806.983.2474, mobile 806.983.1000. Other areas may contact Rhodia, Inc., in Vernon, 940.552.9911, for a list of guar contractors. Contracting, trucking arrangements, and net prices to the producer may vary among contractors.

The following is an example of 2000 guar pricing in the Texas South Plains. .

1) West Texas Guar, Brownfield, located at C C Grain in Brownfield (phone above) has pricing for the following grades, delivered to Brownfield, contracted by May 15, 2001:

<u>Grade</u>	<u>Moisture Maximum</u>	<u>Minimum Test Weight Lbs. per Bushel</u>	<u>Price per Cwt.</u>
#1	13.5%	60	\$14.25
#2	14.0%	59	\$12.50
#3	14.5%	58	\$11.50
#4	15.0%	57	\$10.50
<u>Sample Grade</u>	<u>&gt;15.1%</u>	<u>&lt;56.9</u>	<u>N/A</u>

For contracts signed after May 15, 2001, prices \$0.25/cwt for #1, and \$0.50/cwt for all other grades.

Call for further details regarding poundage, payment date, paying the combine operator, etc.

2) Wes Campbell, Floydada, \$13.00/cwt to producer, 100 acre minimum, with contractor taking delivery on the turn-row.